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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,846	05/29/2001	Vladimir Berezin	08305/045002/98-22-C1	7450

7590

07/09/2003

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EXAMINER

NGUYEN, DAO H

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 07/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/867,846

Applicant(s)

BEREZIN ET AL.

Examiner

Dao H Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 8-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 12-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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### **DETAILED ACTION**

1. In response to the communications dated 01/06/2003 through 01/21/2003, claims 2-20 are active in this application.

### **Acknowledges**

2. Applicant made a provisional election without traverse to prosecute the invention of Group I, claims 2-7, and 12-20. Affirmation of this election was made in the Response to Restriction Requirement dated 01/31/2003, and made of record as Paper No. 11.

Claims 8-11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected group there being no allowable generic or linking claim.

Applicant has the right to file a divisional application covering the subject matter of the non-elected claims.

3. This application is a Divisional of the co-pending Application Serial No. 09/378,565, filed 08/19/1999, which claims the benefit of the U.S. Provisional Application No. 60/097,135, filed 08/19/1998.

### **Oath/Declaration**

4. The Oath/Declaration is defective. A new Oath/Declaration in compliance with 37 CFR 1.67 (a) identifying this application by application number and filing date is required. See MPEP 602.01 and 602.02.

The Oath/Declaration is defective because it does not state that the person making the oath or declaration believes the named inventors to be the original, first, and **join** inventors of the subject matter which is claimed and for which a patent is sought. It appears that the claimed invention is of **join** inventors, not of **sole** inventors.

### Drawings

5. The drawings are objected to for the following reasons.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Figure 1 does not show the references "out1-out4" as described in page 3, lines 11-12, reference characters "gate 1", gates 2, 3 and 4" described in page 4, line 19-20 of Applicant's specification.

A proposed drawing correction or corrected drawings, showing changes in red ink, are required in reply to the Office Action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. However, formal correction of the noted defect(s) can be deferred until the application is allowed by the examiner (see MPEP § 608.02v).

### **Specification**

6. The specification has been checked to the extent necessary to determine the presence of possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### **Claim Rejections - 35 USC § 102**

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

8. Claim(s) 2-5, 7, and 12-14 is/are rejected under 35 U. S. C. § 102 (b) as being anticipated by U.S. Patent No. 5,497,390 to Tanaka et al.

Regarding claim 2, Tanaka discloses a method, as shown in figures 5, 11, and 20, comprising:

accumulating photocarriers in each of a plurality of photocarrier integrators 110, 111 at different times depending on clock circuit 112; and

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successively enabling each of the plurality of photocarrier integrators 110, 111 at different times due to clock signal to connect the photocarrier integrators 110, 111 to a pinned photodiode 107, 136a, 136b. See also column 7, lines 7-48, column 9, line 16 to column 10, line 15.

Regarding claim 3, Tanaka discloses the method wherein the enabling comprises actuating a gate S2/S6 that is connected between each photocarrier integrator 110, 111 and the diode 107, 136a, 136b. See figures 5, 11.

Regarding claim 4, Tanaka discloses the method further comprising, after the enabling, detecting a number of carriers accumulated in the diode. See column 7, lines 7-48, column 9, line 16 to column 10, line 15.

Regarding claim 5, Tanaka discloses the method wherein the diode is pinned photodiode, and further comprising, after the enabling, detecting a number of carriers accumulated in the pinned photodiode. See column 7, lines 7-48, column 9, line 16 to column 10, line 15.

Regarding claim 7, Tanaka discloses the method further comprising detecting light from the photodiode which corresponds to a phase shift which is controlled by the clock. See figures 5, 11 and column 7, lines 7-48.

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Regarding claim 12, Tanaka discloses a method, as shown in figures 5, 11, and 20, comprising:

accumulating photo carriers in each of a plurality of photocarrier integrators 110, 111 at different times based on clock signals CL1, CL2; and

sampling the photo carriers from the photocarrier integrators 110, 111 in the common to die through differential amplifier 113. See also column 7, lines 7-48, column 9, line 16 to column 10, line 15.

Regarding claim 13, Tanaka discloses the method further comprising controlling each of the photocarrier integrators 110, 111 to be connected to the photodiode 107, 136a, 136b at different times due to clock signals. See figures 5, 11, and column 7, lines 7-48.

Regarding claim 14, Tanaka discloses the method wherein the controlling comprises enabling a gate S2/S6. See figures 5, 11.

### **Claim Rejections - 35 U.S.C. § 103**

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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10. Claim(s) 6, 15-20 is/are rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 5,497,390 to Tanaka et al., in view of the following remarks.

Regarding claim 17, Tanaka discloses a method, as shown in figures 5, 11, and 20, comprising: Sampling a plurality of different samples of light in a photodiode 107, 136a, 136b (see also column 7, lines 7-48, column 9, line 16 to column 10, line 15); Tanaka further discloses that the plurality of different samples being 180° out of phase with one another, instead of 90° as claimed. However, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Tanaka so that the samples being out of phase of an angle of 90° with one another, because those skilled in the art will recognize that such modification and variations can be made without departing from the spirit of the invention of Tanaka, and that it would involve only routine skill in the art to modify a phase shift of 180° to a phase shift of 90°.

Regarding claims 6, 15, 16, and 20, Tanaka discloses the method comprising all claimed limitations, except for the integrators including four integrators, and the successively enabling comprises using a first integrator to accumulate carriers between a time 0 and  $\pi/2$ , a second photocarrier integrators to integrate between  $\pi/2$  and  $\pi$ ; a third photocarrier integrator to integrate between  $\pi$  and  $3\pi/2$ , and a fourth photocarrier integrator to integrate between  $3\pi/2$  and  $2\pi$  time slots.



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Tanaka discloses the method having two integrators 110 and 111 function in opposite phase due to the clock outputs CL1 and CL2 (column 7, lines 18-23).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Tanaka to have four photocarrier integrators and that each integrator functions out of phase of an angle of  $\pi/2$  or  $90^\circ$  with one another, because those skilled in the art will recognize that such modification and variations can be made without departing from the spirit of the invention of Tanaka, and that it just be a duplication of working parts of the invention of Tanaka; furthermore, it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

Regarding claim 18, Tanaka discloses the method further comprising detecting a phase shift of the detecting light. See column 7, lines 7-48.

Regarding claim 19, Tanaka discloses all claimed limitations. See figures 5 and the above remarks.

### **Conclusion**

11. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dao H. Nguyen whose telephone number is (703) 305-1957. The examiner can normally be reached on Monday-Friday, 9:00 AM – 6:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (703) 308 - 4910. The fax numbers for Customer Service is (703) 872-9317, for the organization where this application proceeding is assigned is (703) 872-9318 for regular (Before Final) communications or (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read 'Dao H. Nguyen', with a long horizontal line extending from the end of the signature.

Dao H. Nguyen  
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July 02, 2003

**HOAI HO**  
**PRIMARY EXAMINER**